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**Johns Manville****FAX TRANSMITTAL**

Date: 8/10/99 (9:00 AM)

To: BRAD BRADLEY - USEPA
BETH WALLACE - IL. ATTY GEN.

From: DENNY CLINTON

Location:

Phone Number:

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Total Number of Pages (including this cover sheet): 10

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Thank you.

Comments

(303-808-2127)

BRAD
BETH

PLS. FIND ATTACHED NINE (9) SHEETS
THAT SUMMARIZE SITES 2 & 3 REMEDIAL
ALTERNATIVES & ESTIMATED COSTS. IF YOU HAVE
ANY QUESTIONS, PLS. CALL MY CELL PHONE
@ 303-808-2127 OR VOICE MAIL @ 303-978-3543

DENNY CLINTON

ADDITIONAL SITES 2 AND 3 - WAUKEGAN, IL

SUMMARY OF REMEDIAL ALTERNATIVES AND ESTIMATED COSTS

COST SUMMARY SHEET

	"A" SCENARIO CUT AND FILL 2 FT ← as shown by sampling		"B" SCENARIO CUT AND FILL 3 FT ← as shown by sampling not whole site. Cap whole site, except Corn Ed property near discharging.		CAP 2 FT THICK CAP 3 FT THICK PAVE SURFACE 6" gravel, 3" paving		
	COMM LANDFILL	JM LANDFILL	COMM LANDFILL	JM LANDFILL			
SITE 2	\$734,775	\$541,181	\$1,302,610	\$914,573	\$749,063	\$986,438	\$885,938
SITE 3	\$76,704	\$53,034	\$112,352	\$76,530			
TOTAL	\$811,479	\$594,215	\$1,414,962	\$991,103	\$749,063	\$986,438	\$885,938

- Bib - use field findings to help determine depths of excavation
- Dr. Milner - risk specialist - see report 11/8/99
- Site 2 - no sig. risk posed at present. Site 3 would be more innocuous

DRAFT
8/09/99**ADDITIONAL SITES 2 AND 3 - WAUKEGAN, IL****SUMMARY OF REMEDIAL ALTERNATIVES AND ESTIMATED COSTS****SITE 2: "A" SCENARIO - CUT AND FILL @ 2 FT. COVER****NOTES:**

1. SEE GRID LOCATIONS ON SITE 2 DRAWING
2. A1 GRIDS ARE 1 FT. THICK
3. A2 GRIDS ARE 2 FT. THICK
4. GRIDS ARE 100 FT. X 100 FT

TOTAL VOLUME TO BE EXCAVATED AND FILLED

TOTAL OF 3 A1 GRIDS
 12 A2 GRIDS

A1 GRIDS: 100' X 100' X 1' THICK @ 27 CU FT/CU YD = 371 CU YD/GRID
A2 GRIDS: 100' X 100' X 2' THICK @ 27 CU FT/CU YD = 741 CU YD/GRID

3 A1 GRIDS X 371 CU YD/GRID = 1113 CU YD

12 A2 GRIDS X 741 CU YD/GRID = 8892 CU YD

TOTAL IN-PLACE VOLUME: 10005 CU YD

TOTAL EXCAVATED VOLUME (@ 25% expansion): 12506 CU YD

<u>DESCRIPTION</u>	<u>TOTAL REMEDIATION COST</u>	
	<u>@ COMM LANDFILL</u>	<u>@ JM LANDFILL</u>
1. CUT, FILL, AND DISPOSAL COST \$44/YD AT COMM LANDFILL, \$29/YD AT JM	\$550,275	\$362,681
2. ENGINEERING/PROJECT MGMT	\$85,000	\$85,000
3. ENVIRONMENTAL SURVEYS	\$10,000	\$10,000
4. ROAD REPLACEMENT	\$10,000	\$10,000
5. PARKING LOT RESTORATION (PARTIAL)	\$5,000	\$5,000
6. FENCE REPLACEMENT	\$20,000	\$20,000
7. SOIL TESTING	\$7,500	\$7,500
8. LEGAL FEES	\$10,000	\$10,000
9. REVEGETATION	\$2,500	\$2,500
10. AIR MONITORING	\$2,500	\$2,500
11. CONTRACTOR BONDING	\$22,000	\$16,000
12. FISHING PIER ACCESS CONTROL	\$10,000	\$10,000
TOTAL REMEDIATION COST:	<u>\$734,775</u>	<u>\$641,181</u>

DRAFT
8/09/99**ADDITIONAL SITES 2 AND 3 - WAUKEGAN, IL****SUMMARY OF REMEDIAL ALTERNATIVES AND ESTIMATED COSTS****SITE 2: "B" SCENARIO - CUT AND FILL @ 3 FT. COVER****NOTES:**

1. SEE GRID LOCATIONS ON SITE 2 DRAWING
2. B1 GRIDS ARE 1 FT. THICK
3. B2 GRIDS ARE 2 FT. THICK
4. B3 GRIDS ARE 3 FT. THICK
5. GRIDS ARE 100 FT. X 100 FT

TOTAL VOLUME TO BE EXCAVATED AND FILLED

TOTAL OF 3 B1 GRIDS
 6 B2 GRIDS
 13 B3 GRIDS

B1 GRIDS: 100' X 100' X 1' THICK @ 27 CU FT/CU YD = 371 CU YD/GRID
B2 GRIDS: 100' X 100' X 2' THICK @ 27 CU FT/CU YD = 741 CU YD/GRID
B3 GRIDS: 100' X 100' X 3' THICK @ 27 CU FT/CU YD = 1111 CU YD/GRID

3 B1 GRIDS X	371 CU YD/GRID =	1113 CU YD
6 B2 GRIDS X	741 CU YD/GRID =	4446 CU YD
13 B3 GRIDS X	1111 CU YD/GRID =	14443 CU YD

TOTAL IN-PLACE VOLUME: 20002 CU YD

TOTAL EXCAVATED VOLUME (@ 25% expansion): 25003

<u>DESCRIPTION</u>	<u>TOTAL REMEDIATION COST</u>	
	<u>@ COMM LANDFILL</u>	<u>@ JM LANDFILL</u>
1. CUT, FILL, AND DISPOSAL COST \$44/YD AT COMM LANDFILL, \$29/YD AT JM	\$1,100,110	\$725,073
2. ENGINEERING/PROJECT MGMT	\$85,000	\$85,000
3. ENVIRONMENTAL SURVEYS	\$10,000	\$10,000
4. ROAD REPLACEMENT	\$10,000	\$10,000
5. PARKING LOT RESTORATION (PARTIAL)	\$5,000	\$5,000
6. FENCE REPLACEMENT	\$20,000	\$20,000
7. SOIL TESTING	\$7,500	\$7,500
8. LEGAL FEES	\$10,000	\$10,000
9. REVEGETATION	\$2,500	\$2,500
10. AIR MONITORING	\$2,500	\$2,500
11. CONTRACTOR BONDING	\$40,000	\$27,000
12. FISHING PIER ACCESS CONTROL	\$10,000	\$10,000
TOTAL REMEDIATION COST:	\$1,302,610	\$914,573

DRAFT
8/09/99**ADDITIONAL SITES 2 AND 3 - WAUKEGAN, IL****SUMMARY OF REMEDIAL ALTERNATIVES AND ESTIMATED COSTS****SITE 2 : CAP WITH 2 FEET COVER****NOTES:**

1. SEE GRID LOCATIONS ON SITE 2 DRAWING

TOTAL AREA TO BE CAPPED

275 FT. WIDE X	1375 FT. LONG=	378125 SQ.FT.
378125 SQ. FT. X	2 FT THICK =	756250 CU. FT.
		28009 CU. YD.
378125 SQ. FT. X	1.30 /SQ. FT. @2 FT. =	\$491,563

- * STORM DRAINAGE ISSUES
- * ACCESS ISSUES - WEST END OF SITE AND PIER
- * ADDITIONAL LONG TERM MAINTENANCE ISSUES

<u>DESCRIPTION</u>	<u>CAPPING COST</u>
1. CAP AREA @ 1.30 / SQ. FT.	\$491,563
2. ENGINEERING/PROJECT MGMT	\$85,000
3. ENVIRONMENTAL SURVEYS	\$10,000
4. ROAD REPLACEMENT	\$40,000
5. PARKING LOT RESTORATION (TOTAL)	\$25,000
6. FENCE REPLACEMENT	\$38,000
7. SOIL TESTING	\$7,500
8. LEGAL FEES	\$10,000
9. REVEGETATION	\$7,500
10. AIR MONITORING	\$2,500
11. CONTRACTOR BONDING	\$22,000
12. FISHING PIER ACCESS CONTROL	\$10,000
TOTAL REMEDIATION COST:	\$749,063

DRAFT
8/09/99**ADDITIONAL SITES 2 AND 3 - WAUKEGAN, IL****SUMMARY OF REMEDIAL ALTERNATIVES AND ESTIMATED COSTS****SITE 2 : CAP WITH 3 FEET COVER****NOTES:**

1. SEE GRID LOCATIONS ON SITE 2 DRAWING

TOTAL AREA TO BE CAPPED

275 FT. WIDE X	1375 FT. LONG=	378125 SQ.FT.
378125 SQ. FT. X	3 FT THICK =	1134375 CU. FT. 42014 CU. YD.
378125 SQ. FT. X	1.90 /SQ. FT. @3 FT. =	\$718,438

- * STORM DRAINAGE ISSUES
- * ACCESS ISSUES - WEST END OF SITE AND PIER
- * ADDITIONAL LONG TERM MAINTENANCE ISSUES

<u>DESCRIPTION</u>	<u>CAPPING COST</u>
1. CAP AREA @ 1.90 / SQ. FT.	\$718,438
2. ENGINEERING/PROJECT MGMT	\$85,000
3. ENVIRONMENTAL SURVEYS	\$10,000
4. ROAD REPLACEMENT	\$40,000
5. PARKING LOT RESTORATION (TOTAL)	\$25,000
6. FENCE REPLACEMENT	\$38,000
7. SOIL TESTING	\$10,000
8. LEGAL FEES	\$10,000
9. REVEGETATION	\$7,500
10. AIR MONITORING	\$2,500
11. CONTRACTOR BONDING	\$30,000
12. FISHING PIER ACCESS CONTROL	\$10,000
TOTAL REMEDIATION COST:	<u>\$906,438</u>

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8/09/99

ADDITIONAL SITES 2 AND 3 - WAUKEGAN, IL
SUMMARY OF REMEDIAL ALTERNATIVES AND ESTIMATED COSTS
SITE 2: PAVING

NOTES:

1. SEE GRID LOCATIONS ON SITE 2 DRAWING

TOTAL AREA TO BE PAVED

275 FT. WIDE X 1375 FT. LONG= 378125 SQ. FT.

378125 SQ. FT. X 1.90 /SQ FT ~~0.00~~ = \$718,438

- ADDITIONAL LONG TERM MAINTENANCE ISSUES

<u>DESCRIPTION</u>	<u>CAPPING COST</u>
1. PAVED AREA @ 1.90 / SQ. FT.	\$718,438
2. ENGINEERING/PROJECT MGMT	\$85,000
3. ENVIRONMENTAL SURVEYS	\$10,000
4. ROAD REPLACEMENT	\$0
5. PARKING LOT RESTORATION (TOTAL)	\$0
6. FENCE REPLACEMENT	\$20,000
7. SOIL TESTING	\$1,500
8. LEGAL FEES	\$10,000
9. REVEGETATION	\$1,500
10. AIR MONITORING	\$2,500
11. CONTRACTOR BONDING	\$27,000
12. FISHING PIER ACCESS CONTROL	\$10,000
TOTAL REMEDIATION COST:	<u>\$885,938</u>

DRAFT
8/09/99**ADDITIONAL SITES 2 AND 3 - WAUKEGAN, IL****SUMMARY OF REMEDIAL ALTERNATIVES AND ESTIMATED COSTS****SITE 3: "A" SCENARIO - CUT AND FILL @ 2 FT. COVER****NOTES:**

1. SEE GRID LOCATIONS ON SITE 3 DRAWING
2. A1 GRIDS ARE 1 FT. THICK
3. A2 GRIDS ARE 2 FT. THICK
4. GRIDS ARE 50 FT. X 50 FT.

TOTAL VOLUME TO BE EXCAVATED AND FILLED

TOTAL OF 3 A1 GRIDS
 5 A2 GRIDS

A1 GRIDS: 50' X 50' X 1' THICK @ 27 CU FT/CU YD = 93 CU YD/GRID
A2 GRIDS: 50' X 50' X 2' THICK @ 27 CU FT/CU YD = 185 CU YD/GRID

3 A1 GRIDS X	93 CU YD/GRID =	278 CU YD
5 A2 GRIDS X	185 CU YD/GRID =	926 CU YD
TOTAL IN-PLACE VOLUME:		1204 CU YD

TOTAL EXCAVATED VOLUME (@ 25% expansion): 1505 CU YD

TOTAL REMEDIATION COST

<u>DESCRIPTION</u>	<u>@ COMM LANDFILL</u>	<u>@ JM LANDFILL</u>
1. CUT, FILL, AND DISPOSAL COST \$44/YD AT COMM LANDFILL, \$29/YD AT JM	\$66,204	\$43,634
2. ENGINEERING/PROJECT MGMT	\$0	\$0
3. ENVIRONMENTAL SURVEYS	\$0	\$0
4. ROAD REPLACEMENT	\$3,000	\$3,000
5. PARKING LOT RESTORATION (PARTIAL)	\$0	\$0
6. FENCE REPLACEMENT	\$0	\$0
7. SOIL TESTING	\$1,500	\$1,500
8. LEGAL FEES	\$0	\$0
9. REVEGETATION	\$1,500	\$1,500
10. AIR MONITORING	\$1,000	\$1,000
11. CONTRACTOR BONDING	\$3,500	\$2,400
TOTAL REMEDIATION COST:	\$76,704	\$63,034

DRAFT
8/09/99**ADDITIONAL SITES 2 AND 3 - WAUKEGAN, IL****SUMMARY OF REMEDIAL ALTERNATIVES AND ESTIMATED COSTS****SITE 3: "B" SCENARIO - CUT AND FILL @ 3 FT. COVER****NOTES:**

1. SEE GRID LOCATIONS ON SITE 3 DRAWING
2. B1 GRIDS ARE 1 FT. THICK
3. B2 GRIDS ARE 2 FT. THICK
4. B3 GRIDS ARE 3 FT. THICK
5. GRIDS ARE 50 FT. X 50 FT

TOTAL VOLUME TO BE EXCAVATED AND FILLED

TOTAL OF 3 B1 GRIDS
 4 B2 GRIDS
 3 B3 GRIDS

B1 GRIDS: 50' X 50' X 1' THICK @ 27 CU FT/CU YD = 93 CU YD/GRID
 B2 GRIDS: 50' X 50' X 2' THICK @ 27 CU FT/CU YD = 185 CU YD/GRID
 B3 GRIDS: 50' X 50' X 3' THICK @ 27 CU FT/CU YD = 278 CU YD/GRID

3 B1 GRIDS X	93 CU YD/GRID =	278 CU YD
4 B2 GRIDS X	185 CU YD/GRID =	741 CU YD
3 B3 GRIDS X	278 CU YD/GRID =	833 CU YD
TOTAL IN-PLACE VOLUME:		1852 CU YD

TOTAL EXCAVATED VOLUME (@ 25% expansion): 2316 CU YD

<u>DESCRIPTION</u>	<u>TOTAL REMEDIATION COST</u>	
	<u>@ COMM LANDFILL</u>	<u>@ JM LANDFILL</u>
1. CUT, FILL, AND DISPOSAL COST \$44/YD AT COMM LANDFILL, \$29/YD AT JM	\$101,852	\$67,130
2. ENGINEERING/PROJECT MGMT	\$0	\$0
3. ENVIRONMENTAL SURVEYS	\$0	\$0
4. ROAD REPLACEMENT	\$3,000	\$3,000
5. PARKING LOT RESTORATION (PARTIAL)	\$0	\$0
6. FENCE REPLACEMENT	\$0	\$0
7. SOIL TESTING	\$1,500	\$1,500
8. LEGAL FEES	\$0	\$0
9. REVEGETATION	\$1,500	\$1,500
10. AIR MONITORING	\$1,000	\$1,000
11. CONTRACTOR BONDING	\$3,500	\$2,400
TOTAL REMEDIATION COST:	\$112,352	\$78,530

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8/09/99**ADDITIONAL SITES 2 AND 3 - WAUKEGAN, IL****SUMMARY OF REMEDIAL ALTERNATIVES AND ESTIMATED COSTS****UNIT COST ASSUMPTIONS**

1.	LANDFILL DISPOSAL	10	\$/YD.
2.	EXCAVATE AND LOAD AT SITE	5	\$/YD
3.	SPECIAL WASTE TRUCK AND DRIVER HAUL TO COMMERCIAL LANDFILL 4 TRIP/DAY, 12 YARD/TRIP	12	\$/YD
4.	SPECIAL WASTE TRUCK AND DRIVER HAUL TO JM LANDFILL 7 TRIP/DAY, 15 YD/TRIP	7	\$/YD
5.	FILL MATERIAL DELIVERED AND DUMPED	12	\$/YD
6.	SPREAD AND COMPACT	5	\$/YD
7.	PAVING (INCL LEVEL AND COMPACT)	1.9	\$/SQ. FT.
8.	FENCING	12	\$/LINEAR FT.
9.	TOTAL LANDFILL COST - COMMERCIAL	44	\$/YD
10.	TOTAL LANDFILL COST - JM LANDFILL	29	\$/YD
11.	CAPPING SITE @ 2 FT. COVER	1.30	\$/SQ. FT.
12.	CAPPING SITE @ 2 FT. COVER	1.90	\$/SQ. FT.

TOTAL LANDFILL COSTS

	COMMERCIAL LANDFILL \$/YD	JM LANDFILL \$/YD
1. EXCAVATE	5	5
2. HAUL	12	7
3. DELIVER FILL	12	12
4. SPREAD AND COMPACT	5	5
5. LANDFILL COST	10	0
<u>TOTAL</u>	\$44	\$29